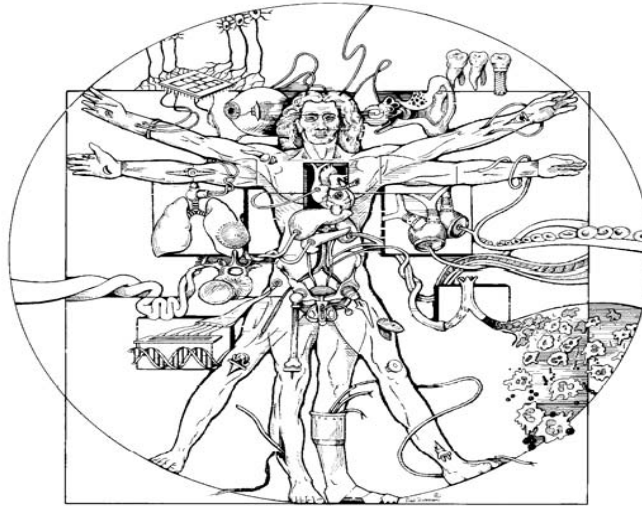


Biomedical Engineering Seminar



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“A model of time-dependent changes of the vocal tract shape for simulation of speech and singing”

Abstract: During speech or singing production, the human vocal tract is a nearly continuously changing conduit through which sound propagates. As the vocal tract shape changes, its resonance frequencies also continuously vary, shaping an excitation signal into a sequence of vowels and consonants. This presentation will focus on modeling the time-dependent movements of the vocal tract shape and their acoustic consequences. Based on data collected with MRI and x-ray microbeam techniques, a kinematic model of the vocal tract area function has been developed that allows for efficient specification of time-dependent cross-sectional area changes in an acoustic waveguide. When coupled with a voice source, the result is a basic simulation of the sound production process from which pressures and airflows are generated. The components of the model will be presented and then used to demonstrate some time-dependent relations between the vocal tract shape and resulting acoustic characteristics.

Monday, October 8, 2007

2:00 pm

Keating 103

Host: Urs Utzinger, Ph.D. (626-9281)

Persons with a disability may request a reasonable accommodation by contacting the Disability Resource Center at 621-3268 (V/TTY). Requests should be made as early as possible to allow time to arrange the accommodation.